

THE

CURSOR

GROUP™

COPYRIGHT 1980
The Cursor Group

THE TINY MICRO COMPUTER NEWS SERVICE

VOLUME II

\$2.00 per issue

SEPTEMBER 1980

\$9.75 Semi-Annually

ISSUE 2

ASTROVISION ACQUIRES BALLY CONSUMER PRODUCTS DIVISION; NEW MARKETING DRIVE PLANNED FOR HOME 'BALLY PROFESSIONAL ARCADE'

COLUMBUS, Ohio - 9/19/80 - AstroVision, Inc., Columbus-based electronics firm is mounting a three-prong marketing and manufacturing drive for the 'Bally Professional Arcade'. AstroVision purchased the Consumer Products Division of Bally Manufacturing Corp. in August.

'The Bally Professional Arcade', with 14 cassettes and 28 existing games and educational programs, is the most technically sophisticated home electronic video game center available. It is the only such unit with programming capability which through the addition of a low cost add-on feature, called "BASIC" with an audio interface, expands capabilities for self-teaching and other uses.

"AstroVision's plans for the 'Bally Professional Arcade' includes an international marketing thrust into Europe and Latin America, the introduction of seven to nine new 'Videocade' cassettes, and the introduction of an add-on keyboard to make existing 'Bally Professional Arcade' units into full scale home computer systems," Dan Dawson, AstroVision Vice President stated.

"AstroVision will position the 'Bally Professional Arcade' as a complete home computer system with state-of-the-art games plus all at-home needs," Dawson continued.

AstroVision will introduce a new 'Videocade' cassette named "Dogpatch" in time for Christmas, 1980 sales and will launch six to eight additional cassettes with new programming in 1981. These cassettes will

include the long sought-after "Second Generation Space Invaders Game".

The full scale add-on keyboard will also be available in 1981, according to Dawson.

"The Bally Professional Arcade is far more than a game machine. It offers basic programming capabilities with the "Brain", a powerful micro-processor that creates a memory bank and which holds more than 12,000 instructions, even before a cassette is inserted. Each unit includes skill games such as Checkmate, Gunfight and Scribbling and features a full five function, ten-key calculator," Dawson said. "With the add-on keyboard scheduled for 1981, the 'Bally Professional Arcade' will be a complete

home video computer center offering versatile family entertainment plus vital bookkeeping, business management and household management programs".

Games and educational programs currently offered for the 'Bally Professional Arcade' include: 280 Z-zzap, Bally Pin, Sea Wolf, Red Baron, Football, Tornado Baseball, Star Battle

Astro Battle (a space invader game), Amazin' Maze', Tic-Tac-Toe, Black Jack, Poker, Acey Ducey, Dodgem, Missile, Panzer Attack, Brickyard/Clowns, Tennis, Hockey, Handball, Bingo Math, Speed Math, Letter Match, Spell 'n' Score, Crosswords, and BASIC.

BASIC, a unique feature for the 'Bally Professional Arcade' permits the user to create his own programs, it provides an entire library of video games, art, music and more, plus a self-teaching course that lets users develop programs in minutes.

The 'Bally Professional Arcade' will be available through Montgomery Wards stores and other leading retailers. For further information contact AstroVision, Inc.,



MAIL ADDRESS: P.O. BOX 266, NORTH HOLLYWOOD, CA 91603

BUSINESS ADDRESS: 6115 CLYBOURN, SUITE 25, NORTH HOLLYWOOD, CA 91606 • (213) 763-7701

6460 Busch Blvd., Suite 225, Columbus, Ohio
43229, 800-848-4377.

'Bally Professional Arcade' units will have
suggested retail prices of about \$299.00
with cassette programs at \$19.95 & \$24.95.

BALLY WILL CONTINUE SUPPORT OF PREVIOUSLY SOLD PRODUCTS

Dick Konopa, Products Manager, Consumer
Products Division, Bally Manufacturing
Corp., released the following statement:

FRANKLIN PARK, Illinois - 9/24/80

"As of August 15, 1980, the Consumer Prod-
ucts Division of Bally Manufacturing Corp.
has been purchased by AstroVision Inc.,
6460 Busch Blvd., Suite 225, Columbus,
Ohio.

Bally Manufacturing Corp. will continue to
honor warranty and service obligations of
those units purchased from Bally Consumer
Products Division.

Units being returned should be sent direct-
ly to our service center: Rex Television
Service Company, 6011 South Pulaski Road,
Chicago, Illinois 60629.

For units in warranty, a proof of purchase
must be supplied."

A FEW WORDS

BY

FRED CORNETT
MANAGING EDITOR

When I first got wind of this sale, I imm-
ediately contacted Dick Konopa at Bally,
and asked him for the story. Dick said he
was asking all publications to refrain
from printing anything regarding the Bally
sale until a definitive legal statement
could be released to us en-masse.

I am however, apparently the only publish-
er to honor his word - hence this late
issue.

The Cursor Group has had several conver-
sations with Mr. Martin Albert, President
of AstroVision, and my general impression
is that of definite optimism!!

As most of our readers are only too well
aware, the Bally "Arcade" has consistently
been treated as the "ugly step-child" by
the major powers-to-be at Bally (too bad
they didn't have our confidence in their
product). This was their first foray into
CURSOR VOL.II PAGE 58

the retail market, and like many inexper-
ienced fighters, they felt they would
rather talk than take the chance of gett-
ing hurt!

The only missing ingredient this brilliant-
ly conceived, well engineered, modestly
priced micro needed to become a huge suc-
cess was an aggressive and enthusiastic
distribution network, backed by extensive
advertising and sufficient product support.

Mr. Albert has conveyed a very aggressive
dedication in promoting the 'Arcade' and
also in new product development! Astro-
Vision has already started gearing up pro-
duction for a modified "Audio Cassette
Interface" that will load programs with a
great deal less difficulty. Mr. Albert
expects retail availability in early Nov-
ember. We at Cursor are in the process of
scheduling an October meeting with Astro-
Vision, and will keep you informed.

We are looking forward to having as cord-
ial a relationship with AstroVision as we
have had with Bally in the past (hopefully
even better).

I would, at this time, like to say that it
has been a great pleasure working with Mr.
Dick Konopa at Bally who has been extrem-
ely helpful and very supportive of Cursor's
efforts as the International Bally User
Group (in case you aren't aware - Bally
has been informing everyone who contacts
them of our services). Once again,

Thanks Dick, you're a gentleman!!

SPIDER WEB

BY

ALBERT PAUL

EDITORS NOTE:

The programs of Albert Paul constitute a
classical example of "Good things come in
small packages!". See Alberts' last pro-
gram "RING" on page 31 of April/May issue
of CURSOR.

1Ø CLEAR ;X=4Ø;B=Ø

2Ø A=RND (8)

3Ø IF (A=3)+(A=6)+(A=7)X=42

4Ø LINE -X,Ø,1;LINE X,Ø,1;LINE Ø,X,4;LINE
Ø,-X,1;LINE B,Ø,4

5Ø B=B+A;LINE B,Ø,4;LINE Ø,X,1;LINE -B,Ø,1
;LINE Ø,-X,1;LINE B,Ø,1

6Ø X=X-A;LINE Ø,X,1;IF X<ØGOTO 8Ø

7Ø GOTO 5Ø

8Ø FOR T=1TO 1ØØØ;NEXT T;RUN

=====

IMPORTANT NOTE:

It is sometimes difficult to ascertain the correct number of spaces with a PRINT statement. To facilitate ease of input, we are using the special character "r" to designate a SPACE wherever confusion could exist.

Also, please note that with all of our programs the number "ZERO" will be shown with a slash through it "ø", while the letter "o" will not!!

FC

=====

REVERSE

BY

KARL H. WILVERT

EDITORS NOTE:

The following is an excerpt from Karl's letter:

Fred,

I am enclosing my check for renewing my subscription to >CURSOR, also enclosed is a small program that I wrote, it is primarily for children. It is an educational type of game using numbers. It can be modified very easily to work with letters if desired.

I have a Challenger CIP that I use to communicate with the BALLY. My cassette recorder serves as an amplifier for the cassette ports of each computer. This is fine for one-way communication. Mostly I send data from the CIP to the BALLY. The full size keyboard of the CIP is handy. This set-up allows for me to write programs that run on both computers at the same time, many games are more challenging if the player must monitor two CRT's for information. If I only wish to use the keyboard, I enter a small machine level program into the CIP and the BALLY sees it as cassette input. This operates in principle the same as the keyboard you featured in your January issue.

I am pleased that I started with >CURSOR at the beginning. The information that has been presented to date has increased the use of my BALLY almost 300%. I can do things to it now that I didn't think were possible when I first bought mine in Feb of 1977. Keep up the good work!!

Karl H. Wilvert

Many thanks to Karl for the good words, and especially this program. If you the reader have a program that you like, please send it to us!!!!!!

REVERSE INSTRUCTIONS

I wrote this program for my 7 year old daughter. This game teaches number relationships by having the player rearrange the list in the proper order. This is done by reversing leading portions of the list. Though this is relatively simple for adults it can be a challenge for a child.

The computer will make a list of the numbers 1 thru 9 in random order. It will then ask you how many you want to reverse. You then select the number and hit go. The computer will rearrange the list and ask again. This is done until the list is in ascending order. A siren will sound and the number of moves used will be displayed. To continue playing, follow the instructions given at that time. If you wish to stop play in the middle of the game INPUT ø.

EXAMPLE

If your list is:	9 8 7 1 2 3 4 5 6
and you reverse 9.	
You will get:	5 6 4 3 2 1 7 8 9
If you reverse 2.	
You will get:	6 5 4 3 2 1 7 8 9
If you reverse 6.	
You will get:	1 2 3 4 5 6 7 8 9
	THIS IS A WINNER!

PROGRAM EXPLANATION

- 5 Screen Setup
- 10- 15 Messages for player
- 20- 50 Generates RND #'s from 1 TO 9 in RND order & stores them in memory.
- 55 Player message
- 60 Initialize Turns Counter, Show list
- 65- 66 Prompt player for # of #'s to move
- 70- 75 Evaluate response
- 80- 82 Indicate invalid response & re-do
- 85 Increment Turns Counter
- 90-110 Rearrange # list per player input.
- 115 Display list
- 120-125 Check if current list is winner.
- 130-135 Siren & Winner message
- 140-145 See if player wants to play again.
- 150-160 Message indicating game over.
- 200-220 Subroutine to display # list
- 225 Subrtn to blank lines during play.
- 230 Time delay subroutine.

MAJOR VARIABLES

- G Sound Generation
- H Sound Generation
- J Duplicate # prevention pointer
- K Number list pointer
- Q Time Delay
- R Player response of # to reverse
- T Number of turns used


```

1 .
2 .ζζζζREVERSE
3 .ζζADAPTEDζζBY
4 .KARL H WILVERT
5 CLEAR ;BC=125;FC=10;&(9)=255;NT=4
10 CX=-23;CY=40;PRINT "REVERSE
15 CX=-77;CY=24;PRINT "WORKING UP LIST OF
  ζNUMBERS
20 @ (1)=RND (9)
25 FOR K=2TO 9
30 @ (K)=RND (9)
35 MU=@ (K)
40 FOR J=1TO K-1
45 IF @ (K)=@ (J)GOTO 30
50 NEXT J;NEXT K
55 CX=-77;CY=24;PRINT "HERE WE GO...THE L
  IST IS :
60 T=0;GOSUB 200
65 CX=-77;CY=-8;PRINT "HOW MANY SHOULD I ζ
  REVERSE?
66 NT=15;MU="R";NT=0;CX=-29;CY=-32;PRINTζ
  "INPUT #",;NT=3;INPUT R;NT=0
70 IF R=0GOTO 140
72 IF R<0GOTO 80
75 IF R<10GOTO 85
80 CX=-59;CY=-32;PRINT "I CAN ONLY DO 1ζ→
  ζ9";GOSUB 230;CX=-77;CY=-32;GOSUB 225
82 GOTO 65
85 T=T+1
90 FOR K=1TO R÷2
95 Z=@ (K)
100 @ (K)=@ (R-K+1)
105 @ (R-K+1)=Z
110 NEXT K
115 GOSUB 200
120 FOR K=1TO 9
123 IF @ (K) #KGOTO 65
125 NEXT K
130 CX=-77;CY=-8;GOSUB 225;CX=-77;CY=-32;G
  OSUB 225
131 &(21)=15;FOR G=1TO 10
132 FOR H=15TO 25;&(19)=H;NEXT H
133 FOR H=25TO 15STEP -1;&(19)=H;NEXT H
134 NEXT G;&(21)=0;&(19)=0
135 CX=-77;CY=-8;PRINT "ζζζYOU WON INζ",;#
  2,T,"ζMOVES!!
140 CX=-65;CY=-32;INPUT "AGAIN?ζζ (YES=1 NO
  =0) "A
145 IF ARUN
150 CLEAR ;NT=2;CX=-47;CY=24;PRINT "GOODBY
  E FOR NOW!
152 CX=-77;CY=0;PRINT "*****
  *****
155 CX=-59;CY=-24;PRINT "HOPE TO SEE YOU A
  GAIN.
160 GOSUB 230;CLEAR ;STOP
200 NT=0;CX=-53;CY=8
205 FOR K=1TO 9
210 PRINT #2,@ (K),

```

```

215 NEXT K
220 PRINT ;RETURN
225 PRINT "ζζζζζζζζζζζζζζζζζζζζζζζζζζζζ";RET
  URN
230 FOR Q=1TO 1000;NEXT Q;RETURN

```

BLANK HIGH QUALITY TAPE

If you have wanted High Quality "Glitch Free" Computer Digital Tape Cassettes such as those RADIO SHACK sell for upwards of \$3.50 each but didn't want to pay the price, try CURSOR Brand C20 Digital Tapes. 10 TAPE CASE (includes individual poly boxes) \$13.75 including postage. CURSOR, 59 E. Orange Grove Ave., Burbank, CA 91502

CHEAP TIME SAVING DEVICE

Do you only input the short programs in CURSOR because you didn't want to spend two hours inputting the long ones - only to find you made input errors and will have to spend one more hour debugging? If so, why not spare yourself all the trouble and buy your issues on tape? \$3.95 per Issue OR \$7.40 for any two Issues (includes postage, etc.). CURSOR, 59 E. Orange Grove Ave. Burbank, CA 91502

DESIGN

BY
MARK REAM

EDITORS NOTE:

This delightful little program puts up some very nice designs. When "PRESS DESIRED CHARACTER" is printed on-screen, select the character you would like to see as the central theme of the design and merely press that key.

We have added a couple modifications to the program that make some interesting changes. Press "GO" for new character. F.C.

```

10 .DESIGN
20 .BY MARK REAM
30 CLEAR ;NT=0
40 CX=-77;CY=40;PRINT "PRESS DESIRED CHAR
  ACTER!
50 A=KP;CLEAR
60 FOR B=1TO 285;TV=A;NEXT B
70 FOR C=-80TO 75STEP 2;BOX C,0,1,88,3;NE
  XT C
90 IF KP=13GOTO 40
100 GOTO 90

```

The above program as-stands does a horizontal sweep which changes the characters, add line 80, which will add a vertical sweep.

```

80 FOR C=43TO -43STEP -2;BOX -2,C,156,1,3
  ;NEXT C

```

Make the following line changes to automatically run through all the special characters that are available on the Bally, one character at a time, pausing for a few seconds in between displays.

```

40 FOR A=33TO 99;CLEAR
50 Eliminate this line!
90 FOR X=1TO 1500;NEXT X
100 NEXT A

```


MANUALS MANUALS MANUALS

NOTE: ALL MANUALS SENT 3RD CLASS UNLESS OTHERWISE DESIGNATED

1. **Bally On-Board ROM Sub-Routines.** Explains the use of the on-board routines which allow you to perform such things as you find in the "Machine Language Programs" in Cursor. Includes ASCII Standard & Nonstandard Character Sets, Cassette Memory Structure; Output Ports; Input Ports; Bally Data Base Locations; Bally Memory Locations; and On-Board ROM 8K Hex Dump. \$3.99
2. **Hackers Manual.** Describes features provided in the Tiny Basic but not documented in the Bally Instruction Booklet. (Additional Commands). \$3.49
3. **Disassembled Tiny Basic (COOS Z80 Assembler Version 02.15)** A complete assembly language listing including OP Code and comments of the Tiny Basic Cartridge. \$7.49
4. **Disassembled Brickyard & Clowns.** A complete assembly language listing including OP Code and comments. \$7.99
5. **Disassembled DEMO Cassette.** A complete assembly language listing including OP Code and comments. \$7.49
6. **Bally System Description Book.** Extensive and includes "Electrical Specifications for Midway Custom Circuits", Timing Interrupt handling explanations, etc. \$7.99
7. **Disassembled System Software.** A complete assembly language listing including OP Code and comments to include: Home Video Game Equates; Port Equates; System Call Indexes; Macros; Music Macros; Music Equates; System RAM Memory Cells; User Supplied Routines; Masks; UPI Routines Address Tables; Sentry; BCD Divide; BCD Subtract & Add; Decrement Counters & Timers; Music CPU; Vectoring Routines; Paint Rectangle Routines; Write Routines; Character Display Routines; Display BCD; Menu Routines and much, much more. \$11.99
8. **Disassembled On-Board Games.** A complete assembly language listing including OP Code and comments to include: Scribbling, Calculator, Checkmate, Gun Fight. \$13.75
9. **Bally Service Manual.** Schematics, Parts Lists, instructions for removing RF Shields, and much more. No one should be without it!! \$3.19

NOTE: Add 7% to the total order for First Class Postage. Send to: CURSOR, 59 E. Orange Grove Ave., Burbank, CA 91502

TONIC FOR BITTER MUSIC

Enhancements to Cursor music program, page 18

If you have had the experience of carefully cramming your Bally's memory with an entire song, and upon playing it discovered sickening flaws in the timing, join the club! Here's the problem. Each duration poke tells the computer to count to a certain number while it plays each note. The bigger the number the longer the note sounds. The bad news is that the Bally can count to 50 in the time it takes it to put the data into the tone register, even for a duration of 1. So a quarter note (duration 50) plays only slightly longer than a 1/32 note (duration 6). This sounds awful when the machine is rolling along playing 16th and 32nd notes at a fast clip and the final note or a change-of-rhythm quarter note comes along and zips through disguised as a 16th note! The following correction will let the Bally peek into each duration byte as it comes up, choose the ones longer than a quarter note and double them while dividing the quarter and shorter notes by a factor of 12. Using this technique even Dave Brubeck's "Take Five" sounds respectable (somewhat) on the Bally

ADD LINE 225

```
225 W=%(C+3)÷256+127;IF W>25W=W×24
```

CHANGE LINE 230

```
230 FOR D=1TOW÷12xT;NEXT D
```

FURTHER ENHANCEMENT!

To get rid of hesitation in music caused when computer adds 101 to the A register in line 245 make

these changes:

```
200 NT=0; &(16)=49;&(21)=10;&(22)=136;FOR A=
-24574 TO -23160 STEP 101
```

245 NEXT C; NEXT A; GOTO 210

MATH QUIZ

BY

HANK CHIUPPI

This program was designed for children in the primary grades, dealing with addition and subtraction at those levels.

"Math Quiz" allows you to select: addition, subtraction or both. It also let's you select the size of the numbers you wish to work with, i.e., less than 10, 18, 100 or 1000. You may also select the total number of problems you wish to solve.

To hold the players attention, the display consists of four different colors at the same time-all changing with each new problem. The computer prints out the problem number, a score, and the number of incorrect answers. You received 10 points for a correct answer, and -10 for an incorrect one. If answer is incorrect, you have 3 more tries; on the fourth try, you are given the correct answer, and an additional -10 points.

Also, there are RANDOM "Bonus" problems, which can give you 50 bonus points if answered correctly. However, you only have 1 chance, and -25 will be awarded for an incorrect answer. Sound effects and colors (flashing) alert you to the bonus condition.

MATH QUIZ

VARIABLES

- ```

A Problem Type selected
B Maximum Problem Size
C Numbers used in Problems
D " " " "
E Inputted Answer
F Selects RND Statements for Normal &
 Bonus Problems
G Select RND Statement for Bonus
H Selects "+ or -" for "Both" function
J Total Number incorrect.
M Correct Answer
R Used if Answer is Correct.
S Score
T If T=3, Problem is Bonus
U Used for Bonus Sound Effects & Timing
V " " " " " " "
W " " " " " " "
X Line # Reference for "+ - or BOTH".
Y Maximum Problem Size
Z Used for Timing

```



# MATH QUIZ

BY  
HANK CHIUPPI

```

5 CLEAR ;BC=0;FC=7;BOX 0,0,160,44,1
10 CX=-32;CY=0;PRINT "MATH QUIZ";GOSUB 20
130
15 FOR RM=20078TO 20128STEP 2;%(RM)=0;NEXT RM
20 CLEAR ;INPUT "? PLUS=1; MINUS=2; BOTH=3"A
30 IF (A>0)+(A<4)=2X=AX200;GOTO 40
35 GOSUB 150;GOTO 20
40 CLEAR ;PRINT "PICK NUMBERS:
41 PRINT " NO.'S 10 & LESS=1
42 PRINT " NO.'S 18 & LESS=2
43 PRINT " NO.'S 100 & LESS=3
44 PRINT " NO.'S >100=4
45 INPUT "?B;P=1
50 IF B=1Y=10
51 IF B=2Y=18
52 IF B=3Y=100
53 IF B=4Y=1000
55 IF (B>4)+(B<1)GOSUB 150;GOTO 45
56 INPUT "INPUT NUMBER OF PROBLEMS;YOU WISH TO SOLVE"A
60 CLEAR ;PRINT "READY";FOR Z=1TO 500;NEXT Z
70 CLEAR ;PRINT "SET";FOR Z=1TO 250;NEXT Z
80 CLEAR ;PRINT "GO!!!!!!";FOR Z=1TO 50;NEXT Z
90 GOTO X
92 INPUT "?E;IF E=M R=0;GOTO 1100
94 IF E#M R=R+1;GOTO 1200
96 C=RND (Y);D=RND (Y);RETURN
100 CY=40;PRINT "MATH QUIZ";PRINT "ZZZOVER";A=KP;CLEAR ;&(9)=50;GOTO 15
150 CLEAR ;PRINT "DOES NOT COMPUTE!!!!";GOSUB RM;RETURN
200 GOSUB 1000
210 T=RND (6);IF T=3GOSUB 2000
220 GOSUB 300
230 CX=-80;CY=40;PRINT #5,C;PRINT "+",#4,D;PRINT "=";P=P+1
240 GOSUB 92
300 GOSUB 96
310 IF C+D>YGOTO 300
320 M=C+D;RETURN
400 GOSUB 1000
410 T=RND (6);IF T=3GOSUB 2000
420 GOSUB 500
430 CX=-80;CY=40;PRINT #5,C;PRINT "-",#4,D;PRINT "=";P=P+1
440 GOSUB 92
500 GOSUB 96
510 IF C-D<0GOTO 500
520 M=C-D;RETURN

```

```

600 H=RND (2)
610 IF H=1GOTO X-400
620 IF H=2GOTO X-200
700 PRINT "THE ANSWER IS",M,;R=0;GOSUB RM;GOTO X
1000 CLEAR ;BOX 0,0,160,88,1;BC=RND (32)x8;FC=BC-2;&(0)=FC+48;&(1)=FC+48;&(2)=BC;&(3)=BC;&(9)=21
1010 IF P=A+1P=P-1;GOSUB 1020;GOTO 100
1020 CX=8;CY=8;PRINT "SCORE:",#5,S;CX=8;CY=-8;PRINT "PROB #:",#4,P;CX=8;CY=-16;PRINT "# WRONG",#4,J;RETURN
1100 S=S+10;F=RND (5);GOSUB 1100+Fx10;IF T=3GOTO 1300
1105 GOSUB RM;GOTO X
1110 PRINT "WAY TO GO!";RETURN
1120 PRINT "THAT'S RIGHT!";RETURN
1130 PRINT "YOU'RE OK!";RETURN
1140 PRINT "YOU'RE SMART!";RETURN
1150 PRINT "YOU GOT IT!";RETURN
1200 IF R=1GOTO 1295
1210 IF R=4GOTO 700
1220 F=RND (5);GOSUB 1220+Fx10;IF T=3GOTO 1400
1223 IF H=1GOTO 240
1225 IF H=2GOTO 440
1228 GOTO X+40
1230 PRINT "SORRY";RETURN
1240 PRINT "THAT'S WRONG!";RETURN
1250 PRINT "NO WAY!";RETURN
1260 PRINT "TRY AGAIN!";RETURN
1270 PRINT "THINK!";RETURN
1295 S=S-20;J=J+1;GOTO 1220
1300 S=S+40;G=RND (3);GOSUB 1300+Gx10;GOSUB RM;GOTO X
1310 PRINT "YEA!!!!";RETURN
1320 PRINT "YAHOO!!!!";RETURN
1330 PRINT "WOW!!!!";RETURN
1400 S=S-5;G=RND (3);GOSUB 1400+Gx10;GOSUB RM;GOTO X
1410 PRINT "BOO!!!!";RETURN
1420 PRINT "WRONG!!!!";RETURN
1430 PRINT "TSK! TSK!";RETURN
2000 FOR V=1TO 5;&(19)=40;&(17)=30;&(21)=42;&(22)=10;FC=83
2010 FOR U=30TO 20STEP -1;&(16)=U;NEXT U;FC=BC-2
2020 FOR U=20TO 30;&(16)=U;NEXT U
2025 NT=0;CX=-68;CY=-8;PRINT "BONUS!!!"
2030 NEXT V
2040 FOR W=22TO 16STEP -1;&(W)=0;NEXT W
2050 NT=3;RETURN
20130 FOR XY=1TO 1000;NEXT XY;RETURN

```

HAVE FUN!!!



## NOTE MATCH

BY

MIKE PEACE

Here's a game for the "tin-eared" (you know, can't carry a tune, etc.); who have secretly desired becoming a concert affettuosos (and for those who think they have a good ear).

The computer will play a note and your object is to recreate that same note using hand control #1. Push Joystick forward for higher note, or pull Joystick toward yourself for lower note.

If you wish to hear "computer's note" again merely move Joystick toward either side.

```
1 .NOTE MATCH
2 .BY MIKE PEACE
3 .WAVEMAKERS
5 NT=0;CLEAR ;&(21)=255
10 CY=10;A=RND (180)+5;BC=8;FC=7
20 CLEAR ;PRINT "COMPUTERS NOTE";&(19)=A;F
 OR X=1TO 800;NEXT X
30 CLEAR ;PRINT "FOR YOUR NOTE
40 PRINT ;PRINT "HIGHER-PUSH JOYSTICK!";P
 RINT "LOWER-PULL JOYSTICK
45 PRINT ;PRINT "TO HEAR COMPUTER NOTE";P
 RINT "AGAIN-MOVE JOYSTICK <OR>.";PRINT
50 B=B-JY(1);IF B>185B=185
60 IF B<5B=5
70 IF TR(1)GOTO 100
80 IF JX(1)GOTO 20
90 &(19)=B;GOTO 50
100 IF B=APRINT "CONGRATULATIONS! IN TUNE";
 GOTO 150
110 IF (B=A+1)+(B=A-1)PRINT "ALMOST PERFECT
 !";GOTO 150
120 IF (B=A+2)+(B=A-2)PRINT "NOT TOO BAD!";
 GOTO 150
130 IF (B=A+4)+(B=A-4)PRINT "COULD BE BETTE
 R";GOTO 150
140 IF (B>A+5)+(B<A-5)PRINT "NOT CLOSE AT A
 LL!!
150 &(21)=0;PRINT "TO TRY AGAIN, PULL TRIGG
 ER
160 IF TR(1)GOTO 5
170 GOTO 160
```

## ORGANIZING TAPES

BY

FRED CORNETT

I have always felt that one of the major problems we have had is not being able to selectively load a particular program from a tape containing numerous programs. The only way we could do it was to use the ":LIST" command and search through the

tape until we found our program, then back up the tape and ":INPUT".

Well, no more!!! A new function has been found that will allow you to label each program as you store it on tape. When you wish to INPUT the program you will use that "label" to selectively load the program and automatically ignore any program preceding or following it.

The beauty of this system is it will ignore any glitches preceding the actual listing thereby facilitating a clean load.

Let us suppose we wish to load our first program on a tape, we could do it thusly:

```
:PRINT ;TV=1;TV=1;LIST ;PRINT ":RETURN;
RUN
```

Do not press "GO" until your tape recorder is recording!

The KEY here is in "TV=1;TV=1"; this will show up as "??" before the program listing appears.

To retrieve this program from tape, we would key in the following:

```
:INPUT 257
```

Why 257? You must multiply the first TV=number by 256 and add the second TV=number.

To place the second program on tape, do the following:

```
:PRINT ;TV=1;TV=2;LIST ;PRINT ":RETURN ;
RUN
```

To retrieve this program from tape, key-in :

```
:INPUT 258
```

...and so on...

I suggest you record your programs & INPUT codes on the tape label, i.e.,  
257-OTHELLO 258-WUMPUS 259-CLUE

### BACK ISSUES AVAILABLE

We have had numerous requests for info regarding BACK ISSUES! The following are available:

1. Jan. 80 Contains: Electric Bill Analysis; Plastic Puzzle, Instructions for adding a Full-sized ASCII Keyboard; Life Synthesis Model.

2. Feb. 80 Contains: PEEK n' POKE: Hex to Decimal Converter; String Array @ (A) Memory Locator; Instructions on how to add a Printer; Bubble Sort; Camel; Memory Map; WUMPUS.

3. Mar. 80 Contains: Three Voice Music Assembler; Star Wars Music; Chopsticks; Chicago Loop; Lace Curtain; Character Set Size Multiplier; Rotation; National Distributor Info.

4. Apr/May 80 Contains: DMA Graphics (eliminates BOX & LINE commands, allows very complex graphics!); Reference Books, Product Review (Computer Ear-Speech Recognition Unit for Bally); Music Contest; RING; Alarm Clock; Byte Saving Hints.

5. June 80 Contains: Direct Color Video/Audio Circuit (for Color Monitor or VCR etc.); Galactibattle (Game); PRINT & STRING Tutorial; OTHELLO: ASCII Conversion Chart; Cursor Control Chart.

6. July 80 Contains: CURSOR Keyboard & 48K Memory Add-On info; ARCADE GOLF; Shell-Metzner Sort; Wavemakers "Maze-maker"; Floating Point Math; User Group Meetings.

VOL. 2, Issue 1 (August) Contains: Cursor Inventory Control (Business Software); "Connect Four" (a professional quality game); software for the Computer Ear (Anderson Research) - "Fun With Music".

SEND \$1.60 per back issue desired OR \$9.75 for Volume 1 to: CURSOR, 59 E. Orange Grove Ave., Burbank, CA 91502.



# CURSORS

P.O. BOX 266, NO. HOLLYWOOD, CA 91603

## CURSORS OPEN HOUSE:

Saturday, October 18, 80  
11 AM to 3:30 PM  
59 East Orange Grove Ave.  
Burbank, CA 91502

'BACK TO SCHOOL' SPECIAL EDUCATION ISSUE!

FIRST CLASS

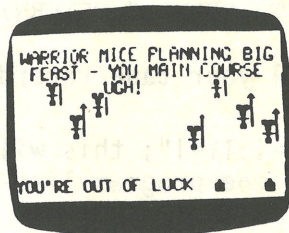


ALL TAPES ARE \$6.95 + .50c POSTAGE.

WAVEMAKERS BOX 94801 SCHAUMBURG, ILL. 60193

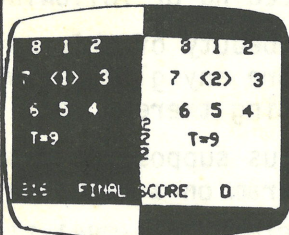
## Tape 6

Mouse in  
the Hat



COMBINES STRATEGY, MEMORY AND LUCK AS YOU TRY TO SHOOT THREE HIDDEN MICE. ELEVEN TOP HATS HIDE THE MICE AND YOU GET TO LOOK UNDER SIX. YOU ONLY GET THREE SHOTS AND YOU HAVE TO MAKE EACH ONE COUNT, OR A WHOLE TRIBE OF MAD WARRIOR MICE COME TO MAKE SOUP OUT OF YOU. CUTE GRAPHICS AIMED AT PLEASING A YOUNGER CROWD BUT ITS A TOUGH CHALLENGE FOR EVEN THE OLDER FOLKS.

ONE PLAYER ONLY, USES HAND CONTROL #1



## SPEED MATH

FAST THINKING IS REQUIRED TO BEAT AN OPPONENT OR THE COMPUTERS TIMER. THE TIMER CAN BE SET FAST OR SLOW DEPENDING ON YOUR SKILL. YOU USE THE CONTROL HANDLE TO ENTER YOUR ANSWER AS YOU ADD UP A COLUMN OF THREE NUMBERS. ONE OR TWO PLAYERS, USES HAND CONTROLS #1 & #2

## Note Match

ALSO IN THIS PROGRAM; TEST YOUR MUSICAL EAR BY TRYING TO MATCH YOUR NOTE AGAINST THE COMPUTERS NOTE. CAN BE USED TO ENHANCE LISTENING SKILLS. ONE PLAYER, USES HAND CONTROL

## INTRODUCING

# BALLY MUSIC SOFTWARE!

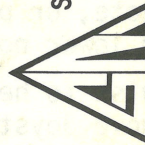
Featuring all 15 of Bach's 2-part Inventions on one tape —

Bach wrote his collection of 15 Two-Part Inventions as instructional exercises for his students. But he couldn't have devised anything better suited to the Bally Arcade's 1.8k memory. If you appreciate Bach you'll be fascinated by this collection. It took 5 months, 22,000 inputs and many new techniques to organize and de-bug this tape. And you are protected by a money-back guarantee of satisfaction. Watch for our future releases of music software!

Just push: INPUT-GO and they all play in succession.

All 15 programs \$7.50 on one tape for . . .

Send check or money order to:



GEORGE MOSES CO.

110 E. North St., Brighton, MI 48116



Johann Sebastian Bach